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Claims

1. Database query set-up unit for combining a set of search criteria in order to set up a database query, **characterized by**
a contribution stack (1) for storing search criteria provided by at least one user or by the system itself in the order of occurrence, whereby each new search criterion provided by said at least one user or by the system is pushed onto said contribution stack (1), and
means (7, 9, 11) for deriving a current information state (8, 10, 12) from said contribution stack (1), whereby said current information state is formed from a subset of the set of search criteria contained in said contribution stack (1), and whereby said current information state (8, 10, 12) is used for accessing a database.
2. Database query set-up unit according to claim 1, **characterized in that** the order in which said search criteria are provided by said at least one user or by the system determines a hierarchy of dependencies between said search criteria.
3. Database query set-up unit according to claim 1 or 2, **characterized in that** each time a new search criterion is provided, it is checked whether said new search criterion refers to an attribute that has already been specified by an earlier search criterion stored in said contribution stack.
4. Database query set-up unit according to claim 3, **characterized in that**, in case said new search criterion refers to an attribute that has already been specified by an earlier search criterion stored in said contribution stack, said earlier search criterion is erased from said contribution stack, and said new search criterion is pushed onto said contribution stack.
5. Database query set-up unit according to claim 3, **characterized in that**, in case said new search criterion refers to an attribute that has already been specified by an earlier search criterion stored in said contribution stack, said earlier search criterion and all search criteria that have been pushed onto the contribution stack afterwards are popped from said contribution stack, and said new search criterion is pushed onto said contribution stack.

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1 6. Database query set-up unit according to anyone of the preceding
claims, **characterized by** means for relaxing the search constraints of a
database query which suppress at least one of said set of search criteria
5 contained in said contribution stack when said current information state
is derived.

7. Database query set-up unit according to claim 6, **characterized in**
that said means for relaxing the search constraints of a database query
select the search criteria to be suppressed according to the order of occur-
10 rence, and/or according to user profiles, and/or according to context in-
formation.

8. Database query set-up unit according to claim 6 or 7, **characterized**
in that at least the most recent search criterion stored in said contribu-
15 tion stack is suppressed when said current information state is derived.

9. Database query set-up unit according to claim 6 or 7, **characterized**
in that at least the oldest search criterion stored in said contribution
stack is suppressed when said current information state is derived.

10. Database query set-up unit according to anyone of claims 6 to 9,
characterized in that search criteria that are suppressed when said cur-
rent information state is derived are erased from said contribution stack.

11. Database query set-up unit according to anyone of claims 6 to 9,
characterized in that search criteria that are suppressed when said cur-
rent information state is derived are only erased from said contribution
stack when it turns out that the query yields a acceptable result.

12. Database query set-up unit according to anyone of claims 6 to 9,
characterized in that search criteria that are suppressed when said cur-
rent information state is derived are maintained within said contribution
stack.

13. Database query set-up unit according to anyone of the preceding
claims, **characterized in that** said search criteria are obtained by means
of an interactive system based on an artificial language, preferably based

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1 on a database query language.

14. Database query set-up unit according to anyone of claims 1 to 12,
characterized in that said search criteria are obtained from said at least
5 one user by means of a natural language dialogue system.

15. Method for setting up database queries by combining a set of search
criteria, characterized by the following steps:

- 10 - pushing search criteria provided by at least one user or by the system it-
self onto a contribution stack (1) in the order of occurrence;
- deriving a current information state (8, 10, 12) from said contribution
stack (1), whereby said current information state (8, 10, 12) is formed
from a subset of the set of search criteria contained in said contribution
stack (1),
- 15 - setting up a database query corresponding to said current information
state (8, 10, 12).

16. Method according to claim 15, characterized in that the order in
which said search criteria are provided by said at least one user or by the
20 system determines a hierarchy of dependencies between said search crite-
ria.

17. Method according to claim 15 or claim 16, further characterized by
each time a new search criterion is provided, checking whether said new
25 search criterion refers to an attribute that has already been specified by
an earlier search criterion stored in said contribution stack.

18. Method according to claim 17, characterized by
erasing said earlier search criterion from said contribution stack, and
30 pushing said new search criterion onto said contribution stack in case
said new search criterion refers to an attribute that has already been spe-
cified by an earlier search criterion stored in said contribution stack.

19. Method according to claim 17, characterized by
35 popping said earlier search criterion and all search criteria that have been
pushed onto the contribution stack afterwards from said contribution
stack, and pushing said new search criterion onto said contribution stack.

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1 in case said new search criterion refers to an attribute that has already
been specified by an earlier search criterion stored in said contribution
stack.

5 20. Method according to any of claims 15 to 19, characterized by a step
of
relaxing the search constraints of a database query by suppressing at least
one of said set of search criteria contained in said contribution stack when
said current information state is derived.

10 21. Method according to claim 20, characterized by a step of
selecting the search criteria to be suppressed according to the order of oc-
currence, and/or according to context information, and/or according to
user profiles.

15 22. Method according to claim 20 or 21, characterized by a step of
suppressing at least the most recent search criterion stored in said contri-
bution stack when said current information state is derived.

20 23. Method according to claim 20 or 21, characterized by a step of
suppressing at least the oldest search criterion stored in said contribution
stack when said current information state is derived.

25 24. Method according to anyone of claims 20 to 23, characterized by a
step of
erasing those search criteria from said contribution stack that have been
suppressed when said current information state is derived.

30 25. Method according to anyone of claims 20 to 23, characterized by a
step of
maintaining those search criteria within said contribution stack that have
been suppressed when said current information state is derived.

35 26. Method according to anyone of claims 15 to 25, characterized by a
step of
obtaining said search criteria by means of an interactive system based on
an artificial language, preferably based on a database query language.

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1 27. Method according to anyone of claims 15 to 25, characterized by a
step of
obtaining said search criteria from said at least one user by means of a na-
tural language dialogue system.

5 28. Computer program product, comprising computer program means
adapted to embody the features of the database query set-up unit as de-
fined in anyone of claims 1 to 14 or to perform the method steps as defined
in anyone of claims 15 to 27 when said computer program product is exe-
10 cuted on a computer, digital signal processor, or the like.

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